VIRGINIA'S EXPANDED NUTRIENT TRADING LAW: WILL IT HELP RESTORE THE CHESAPEAKE BAY WHILE ALLOWING FOR GROWTH?

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INTRODUCTION

On April 18, 2012, Virginia Governor Bob McDonnell boosted the Commonwealth's pollution-reduction toolbox with an expanded nutrient trading program when he signed H.B. 176/S.B. 77 into law.[1] Sparked by the issuance of the Chesapeake Bay Total Maximum Daily Load (the "Bay TMDL"), which updated pollution limits for the Chesapeake Bay and tributaries, and the Virginia Chesapeake Bay TMDL Phase I Watershed Implementation Plan (the "Phase I WIP"),[2] the expanded nutrient trading program allows myriad new market participants to generate and sell certified "nutrient credits"[3] to others to meet existing limits or to offset new pollution from

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[1] *See* 2012 Va. Acts Chapter 808, *available at* http://lis.virginia.gov/cgi-bin/legp604.exe?121+ful+CHAP0808+pdf [hereinafter *Nutrient Trading Act*] (adding legislation that creates a new Chapter 6 in Title 10.1 and amends certain other provisions to Titles 10.1 and 62.1 of the Code of Virginia); S.B. 77, 2012 Gen. Assemb., Reg. Sess. (Va. 2012) (as introduced), *available at* http://lis.virginia.gov/cgi-bin/legp604.exe?121+ful+SB77+pdf [hereinafter *S.B. 77 Introduced*] (introduced by chief patron Senator John C. Watkins; H.B. 176, 2012 Gen. Assemb., Reg. Sess. (Va. 2012) (as introduced), *available at* http://lis.virginia.gov/cgi-bin/legp604.exe?121+ful+HB176+pdf (receiving patronage from Delegate Barry D. Knight).

[2] *S.B. 77 Introduced*, *supra* note 1.

[3] *See Nutrient Trading Act*, *supra* note 1, at 3 ("Nutrient credit" or "credit" means "a nutrient reduction that is certified pursuant to [Article 1.1:1, Chapter 6 of Title 10.1 of the Code of Virginia] and expressed in pounds of phosphorus or nitrogen either (i) delivered to tidal waters when the credit is generated within the Chesapeake Bay Watershed or (ii) as otherwise specified when generated in the Southern Rivers watersheds).

expansion.[4] If the program works as intended, it promises to spur new practices that will help Virginia reach the pollution reduction goals of the Bay TMDL by the 2025 target date[5] without closing off needed economic growth.

Bipartisan support propelled the General Assembly's passage of this legislation, which was crafted to take account of Virginia's experience with its successful existing program[6] as well as insights from a diverse group of stakeholders.[7] Supporters and opponents both agree, however, that sustained rigor on the part of the regulatory bodies[8] as they develop and enforce implementing regulations will be a crucial factor in determining the success of the initiative as a nutrient reduction tool.

REDUCING BAY POLLUTION: SCCUESS REMAINS ELUSIVE DESPITE EFFORTS

The new program is the latest in a long series of efforts by Virginia, other Bay jurisdictions, and the federal government to address the nutrient (nitrogen and phosphorus) and sediment pollution that has impaired the Chesapeake Bay and its tributary streams, endangered iconic fisheries, and threatened the region's economy and way of life. Important milestones include 1987, when the Bay jurisdictions first committed to reducing nutrient pollution in the Bay by forty percent,[9] and 1992, when Virginia and other Bay jurisdictions determined that specific strategies for each tributary

[4] Virginia's new law uses the term "credit" to refer to situations involving compliance with existing limits and for offsetting new or expanded loads. Other statutes refer to "credits" and "offsets" to differentiate the two situations. *Compare* VA. CODE ANN. § 62.1-44.19:18 (facilities permitted under watershed general permit may acquire "credits" to meet permit obligation from other permitted point source facilities), *with* VA. CODE ANN. § 62.1-44.19:15 (new or expanded facilities must acquire "offsets" for new load).

[5] ENVTL. PROT. AGENCY, CHESAPEAKE BAY TMDL 1-9 (2010), *available at* http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html [hereinafter Bay TMDL].

[6] *See* VA. CODE ANN. §§ 62.1-44.19:12, *et seq.*

[7] *See* S.J. 334, 2011 Gen. Assemb., Reg. Sess. (Va. 2011), *available at* http://lis.state.va.us/cgi-bin/legp504.exe?111+ful+SJ334ER+pdf (enacting this joint resolution, the General Assembly resolved that the Virginia Secretary of Natural Resources convene a study group to consider the expansion of the existing program to include the stormwater, onsite septic, wastewater, and agriculture and forestry sectors. The study group was duly convened and, as required, delivered its final report to the General Assembly at the start of the 2012 session).

[8] *See Nutrient Trading Act*, *supra* note 1, at 3 ("Regulatory Bodies" include the Virginia Soil and Water Conservation Board, the Department of Conservation and Recreation, the State Water Control Board, and the Department of Environmental Quality).

[9] *See* 1987 CHESAPEAKE BAY AGREEMENT 1 (1987), *available at* http://www.chesapeakebay.net/content/publications/cbp_12510.pdf (signed by Virginia, Maryland, Pennsylvania, the District of Columbia, the U.S. Environmental Protection Agency (representing the federal government), and the Chesapeake Bay Commission).

would be the most effective way to achieve that goal.[10] The resulting Tributary Strategies were premised, in part, on ongoing, long-term monitoring and modeling to quantify the nutrient reductions needed to achieve the applicable water quality standards for the Chesapeake Bay and its tributaries.[11]

In 1998, the Bay's pollution problems assumed greater urgency when Virginia's portion of the Bay and its tidal tributaries were added to the federal list of impaired waters because they failed to meet water quality standards, including those for dissolved oxygen and aquatic life use attainment, which are directly related to nutrient pollution.[12] In 1999, EPA signed a consent decree that included a twelve-year schedule for developing TMDLs for impaired segments identified on Virginia's 1998 303(d) list.[13] In the landmark *Chesapeake 2000* agreement, Bay jurisdictions committed to the goal of restoring and removing the Bay watershed's impaired waters from the impaired waters list by 2010.[14] If the states did not timely achieve this goal, EPA would be compelled to prepare total maximum daily loads (TMDLs or "pollution limits") for the impaired segments.[15]

In 2003, EPA, in conjunction with Virginia and the other Bay jurisdictions, developed water quality criteria for dissolved oxygen, water clarity, and chlorophyll a in tidal waters that Virginia and other jurisdictions subsequently adopted into their state water quality standards. These criteria

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[10] CHESAPEAKE BAY AGREEMENT: 1992 AMENDMENTS 2 (1992), *available at* http://www.chesapeakebay.net/content/publications/cbp_12507.pdf; *see also* Commonwealth of Va., Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy for the Shenandoah and Potomac River Basins i-ii (2005), *available at* http://dcr.cache.vi.virginia.gov/stormwater_management/documents/tsshenpoall032805.pdf [hereinafter *Virginia Tributary Strategy*]. (Virginia released its first tributary strategy plan, *Shenandoah and Potomac River Basins Tributary Nutrient Reduction Strategy*, in 1996, and has since released other tributary strategies as a continuation of Virginia's commitment to improving water quality and living resources of the Chesapeake Bay. The most recent strategy was released in 2005).

[11] *See e.g. Virginia Tributary Strategy*, *supra* note 10, at 15–17.

[12] Clean Water Act § 303(d), 33 U.S.C. § 1313).

[13] *See* Am. Canoe Ass'n v. U.S.E.P.A., 54 F. Supp. 2d 621, 629 (E.D. Va. 1999) (setting forth terms of consent decree requiring the EPA to prepare TMDLs if Virginia failed to do so by May 1, 2011).

[14] CHESAPEAKE BAY COMM'N ET AL., CHESAPEAKE 2000 AGREEMENT 6 (2000), *available at* http://www.chesapeakebay.net/documents/cbp_12081.pdf.

[15] *See Am. Canoe*, 54 F. Supp. 2d at 629. Other litigation and agreements also compelled the EPA to develop the Bay TMDL. In September 2004, Maryland and the EPA entered into a revised Memorandum of Agreement to extend the schedule for TMDL development for Maryland impaired segments to 2011; Bay TMDL *supra* note 5, at 1-20; ; Kingman Park Civic Ass'n v. U.S.E.P.A., 84 F. Supp. 2d 1 (D.D.C. 1999) (resolving by consent decree to require the EPA to establish TMDLs for the District of Columbia's portions of the tidal Potomac and Anacostia Rivers if not established by the District of Columbia; Am. Littoral Soc'y v. U.S.E.P.A., Civil No. 96-591 (D.De. 1997) (resolving by consent decree to require the EPA to establish TMDLs if Delaware failed to do so); Fowler v. U.S.E.P.A., No. 1:09-cv-00005 (D.D.C. filed Jan. 5, 2009) (resolved by consent decree to require the EPA to establish TMDLs for impaired segments of the Chesapeake Bay by December 31, 2010.

drove the allocations for the total allowable nutrient loads[16] to the Bay and its tributaries among each of the tributary basins and their respective point and nonpoint sources, and also led to an agreement to permanently cap those pollution loads.[17] Virginia's first nutrient trading strategy, the 2005 Chesapeake Bay Watershed Nutrient Credit Exchange Program,[18] was designed to help ensure that those caps remained firm. The General Assembly concluded that a limited trading program implemented through a watershed general permit for nutrients ("WGP")[19] would enable point source dischargers to stay within their limits, [20] allow for economic growth, and help reduce pollution from nonpoint sources like agriculture. Initially, only permitted municipal and industrial wastewater facilities could buy and sell credits from other point or nonpoint sources in the same tributary,[21] but the program was expanded in 2009 to allow nonpoint nutrient offsets for certain development projects. It is now recognized by some as a successful program, [22] which has facilitated significant pollution reductions by Virginia's wastewater sector.

With these other measures, taken over the several decades following 1987, Virginia and other Bay jurisdictions achieved some progress in reducing the Bay's nutrient pollution.[23] Yet as the *Chesapeake 2000* agreement 2010 deadline approached, it became clear that the restoration of Bay wa-

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[16] *See* ROBERT KORONCAI ET AL, SETTING AND ALLOCATING THE CHESAPEAKE BAY BASIN NUTRIENT AND SEDIMENT LOADS, ENVTL. PROT. AGENCY 1–2 (2003), *available at* http://www.chesapeakebay.net/content/publications/cbp_19713.pdf (outlining the agreement of Virginia and other Bay states to allocate the total allowable nutrient loads).

[17] *See generally*, Memorandum from Chesapeake Bay Program Principal Staff Comm. to Principal Staff Comm. Members and Representatives, Summary of Decisions Regarding Nutrient and Sediment Load Allocations and New Submerge Restoration Goals (2003), *available at* http://www.chesapeakebay.net/content/publications/cbp_28933.pdf (emphasizing tributary strategies to achieve the reductions necessary to meet the Chesapeake Bay Program tributary basin nutrient cap load allocations).

[18] Chesapeake Bay Watershed Nutrient Credit Exchange Program, VA. CODE ANN. §§ 62.1-44.19:12 (2012).

[19] *See* Gen. Va. Pollutant Discharge Elimination Sys. (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Va., 9 VAC 25-820-10 to 80 (regulation for general permit that authorizes point source discharges of total nitrogen and total phosphorus to Chesapeake Bay and tributaries).

[20] *See* VA. CODE ANN. § 62.1-44.19:12 ("in keeping with the 2010 timeline and objectives of the Chesapeake 2000 Agreement").

[21] *Id.*

[22] *See* VIRGINIA NUTRIENT CREDIT EXCHANGE ASSOCIATION, INC., http://www.theexchangeassociation.org/News_Articles.htm (last visited Oct. 19, 2012).

[23] By 2010, approximately half of the 40% goal set out in the 1987 Chesapeake Bay Agreement was achieved, based on pollution loading simulations using Phase 5.3.2 of the EPA Chesapeake Bay Program Watershed Model on September 26, 2011, which was downloaded from the following EPA website on December 5, 2011. *See* CHESAPEAKE BAY PROGRAM, REDUCING NITROGEN POLLUTION (last visited June 19, 2012), www.chesapeakebay.net/status_reducingpollution.aspx?menuitem=19691.

ters to water quality standards was still beyond reach and that a Bay TMDL would be required.

THE BAY TMDL AND VIRGINIA'S PHASE I WIP

A. The Bay TMDL, New Allocations, and Planning for Growth

In late 2010, the EPA issued the Bay TMDL, which is comprised of 92 distinct TMDLs corresponding to each of the impaired segments in the Bay watershed;[24] it relies on updated modeling and other data to set new caps on the pollution that the Bay and its tributaries can receive while meeting water quality standards.[25] The Bay TMDL allocates the reductions needed to reach those limits – 185.9 million pounds per year ("MPY") of nitrogen, 12.5 MPY of phosphorus and 6.45 MPY of sediment[26] – among the seven Bay jurisdictions and these jurisdictions' major river basins.[27] It also contemplates that Virginia and the other each Bay jurisdictions will achieve those pollution reductions through watershed implementation plans ("WIPs") they devise.[28] WIPs are detailed roadmaps of the states' strategies; they include existing and anticipated legal, regulatory, and program-related tools, methods for tracking and reporting pollution reductions,[29] and "reasonable assurances"[30]— that is, binding, enforceable and/or incentive-based mechanisms to ensure that the expected reductions are attained.[31]

Notably, the pollution limits of the Bay TMDL do not include any "cushion" designed to accommodate increased pollution from future economic growth or new development; rather, the states are expected to attain their pollution goals even as they grow.[32] To make sure this happens, the

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[24] *See generally*, BAY TMDL, *supra* note 5.

[25] BAY TMDL, *supra* note 5, at Section 5.

[26] *See id.*, at ES-1 (the numbers were very similar close to the totals previously established by the Tributary Strategies); *id.* at Figure 6-9 (this chart reflects, inter alia, the Tributary Strategies' prior allocations of nitrogen 191 million pounds per year ("MPY") and phosphorus 14.45 MPY).

[27] *Id.* at Table 8-5.

[28] *Id.* 8-28. Virginia's total allocations are: nitrogen 53.45 million pounds per year ("MPY"), phosphorus 5.36 MPY, and sediment 2578.9 MPY.

[29] *See, e.g., id.* at 8-11, 8-19.

[30] *See id.* at 7-1 to 7-2.

[31] States failing to make adequate progress on the Bay TMDL are to anticipate federal "backstops," or contingency actions, including expanding NPDES coverage to currently unregulated sources, deepening federal review of state-issued NPDES permits, requiring pollution offsets and additional point source reductions, increasing federal enforcement in the watershed, and conditioning or and redirecting federal grants. *See id.* at 7-12.

[32] *E.g., id.* at Appendix S ("Offsetting New or Increased loadings of Nitrogen, Phosphorus and Sediment to the Chesapeake Bay Watershed").

Bay TMDL explains that states may authorize nutrient trading to "offset" new or increased pollution.[33] Consistent with earlier EPA guidance,[34] the Bay TMDL specifies important elements of a successful nutrient trading program, including appropriate legal authorities to enforce offsets for growth; baselines for credit generators; controls for credit users; provisions ensuring that credits are quantified using appropriate metrics and that expected reductions are verified on the ground; and safeguards to ensure that all pollution is accounted for, that water quality is protected, and that the use of "offsets" in nutrient-impaired water segments will result in progress toward attainment of water quality standards in the impaired segment.[35]

B. Phase I WIP, Flexibility and Growth through Trading

Virginia responded to the challenges of the Bay TMDL with a Phase I WIP[36] that details many ongoing and new pollution control initiatives. Notably, it recited the anticipated issuance of the new Watershed General Permit that would respond to the Bay TMDL's allocations,[37] a resource-management initiative to incentivize agricultural conservation and water quality practices,[38] and proposed legislation to reduce the use of phosphorus in lawns.[39] Perhaps the central strategy in the Phase I WIPs for meeting the TMDL allocations, however, was to propose a wide expansion of the Commonwealth's existing nutrient trading program to include all major sources of nutrient pollution and myriad new generators of nutrient credits. The Phase I WIP explained that the program could yield pollution reductions in a cost-effective, flexible way:

> In order to help meet the challenging pollution reduction requirements imposed by the Bay TMDL, this Phase 1 WIP recommends the Commonwealth expand the nutrient credit exchange program to better ensure that future nutrient and sediment reduction actions are as equitable and as cost-effective as possible

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[33] *Id.* at S-1.

[34] *See, e.g.*, ENVTL. PROT. AGENCY, WATER QUALITY TRADING TOOLKIT FOR PERMIT WRITERS EPA-833-R-07-004 (2007), *available at* http://water.epa.gov/type/watersheds/trading/WQTToolkit.cfm

[35] BAY TMDL, *supra* note 5, at App. S, S-5, 6. Any trading program in impaired waters for which a TMDL has been approved or established by EPA must be consistent with the assumptions and requirements upon which the TMDL is established.

[36] COMMONWEALTH OF VA. CHESAPEAKE BAY TMDL PHASE 1 WATERSHED IMPLEMENTATION PLAN (2010), http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/finalWIPS/VirginiaWIPPortfolioNov292010.pdf. Virginia issued its Phase I WIP at the end of 2010, and it submitted to EPA its Phase II Watershed Implementation Plan which brings the Phase I commitments to a more local level, on March 31, 2012.

[37] *Id.* at 9. The resulting permit is now codified at 9 VA. ADMIN. CODE § 25-820-70 (2012).

[38] *Id.* at 58. The resulting legislation is codified at VA. CODE. ANN. §§ 10.1-104.5 (2012).

[39] *Id.* at 90. The resulting legislation is codified at VA. CODE ANN. §§ 3.2-3600 (2012).

> among all of the source sectors. An expanded program also allows local decision-makers to consider nutrient and sediment generating potential as they face development, land use, and capital planning challenges. The Nutrient Credit Exchange is a tool to allow for greater flexibility in the implementation of necessary nutrient reduction practices. The exchange will also allow for decisions regarding the timing of and location of implementation activities.[40]

Following the issuance of the Phase I WIP, the 2011 General Assembly directed that proposed expansion of the nutrient trading program be studied and that a report be tendered to the General Assembly by the outset of the 2012 Session.[41] The resulting report included many of the elements that were ultimately incorporated into the new trading law.

THE NEW TRADING PROGRAM EXAMINED

A. Diverse Participants and Innovative Credit-Generating Activities

The 2012 Session's trading legislation builds the framework for an expanded and flexible nutrient trading program by: identifying potential program participants and specifying crucial parameters for future regulatory development concerning credit calculation, certification, registration, and trading; preserving market features; mandating administrative reporting requirements; and, authorizing enforcement tools.

Most notably, the legislation broadens the array of regulated entities that will be able to acquire and use nutrient credits as a way of satisfying their permits' discharge limits.[42] Thus, municipal separate storm sewer system ("MS4") permittees,[43] certain construction operations,[44] confined animal feeding operations ("CAFO"),[45] and facilities discharging industrial stormwater[46] may all be able to use certified nutrient credits to meet their permit

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[40] *Id.* at 11–12.

[41] S.J. 334, 2011 Gen. Assemb., Reg. Sess. (Va. 2011).

[42] *See* CHESAPEAKE BAY COMM'N, NUTRIENT CREDIT TRADING FOR THE CHESAPEAKE BAY: AN ECONOMIC STUDY 54 (2012) (concluding that trading offers the potential to significantly reduce the cost of achieving the water quality goals of the TMDL, that potential savings increase as more source categories are allowed to participate, and that allowing agricultural nonpoint sources to participate increases the number of low-cost options for reducing nutrients).

[43] *See* VA. CODE ANN. § 10.1-603.15:3. A (2012) (authorizing use of nutrient credits to comply with any waste load allocations established as effluent limitations in an MS4 permit issued under § 10.1-603.2:1).

[44] *See* VA. CODE ANN. § 10.1-603.15:3. B (2012) (authorizing use of nutrient credits to comply with water quality requirements under the General VSMP Permit for Discharges of Stormwater from Construction Activities or a Construction Individual Permit).

[45] *See* VA. CODE ANN. § 10.1-603.15:3.C (2012) (authorizing use of nutrient credits for compliance with any waste load allocations contained in a Virginia Pollutant Discharge Elimination System (VPDES) permit).

[46] *See* VA. CODE ANN. § 10.1-603.15:3.D (2012) (authorizing entities to acquire, use, and transfer nutri-

obligations, provided they also satisfy additional criteria such as regulatory scrutiny of compliance plans[47] or, in the case of MS4s, using only nutrient credits generated in the same tributary.[48]

The legislation also specifies a far wider range of potential credit-generating activities as compared with those permitted under Virginia's earlier trading program. Thus, the new program envisions the generation of credits from agricultural and urban stormwater best management practices ("BMPs"), use or management of manures, managed turf, land use conversion, stream or wetlands projects, shellfish aquaculture, algal harvesting,[49] activities associated with wastewater collection, treatment and beneficial reuse,[50] and "other established or innovative methods of nutrient control or removal, as appropriate."[51] The legislation also requires a regulatory procedure to be established for converting wetland and stream credits to nutrient credits.[52]

B. Credit Certification, Registration, and Trading

The statute directs the Soil and Water Conservation Board and the State Water Control Board to establish, by regulation, processes under their respective jurisdictions for timely certifying the credits that may be generated through these innovative nutrient control or removal activities.[53] It also clarifies that nutrient credits certified under the original trading law – generated by point sources covered by the watershed general permit or certified by the Water Board – are grandfathered into the new program.[54]

Regulations will clarify how the nutrient credits from each credit-generating practice will be calculated,[55] dictate reporting requirements and

ent credits to comply with any waste load allocation established as effluent limits in the Industrial Stormwater General (VPDES) Permit).

[47] Following review of submitted compliance plans, the Department of Conservation and Recreation ("DCR") may approve an MS4's use of nutrient credits for compliance purposes, and the State Water Control Board ("Water Board") may approve the use of nutrient credits by CAFOs and industrial stormwater facilities. *See* VA. CODE ANN. § 10.1-603.15:3.A, C-E (2012).

[48] *See* VA. CODE ANN. § 10.1-603.8:1.B (2012).

[49] *See* VA. CODE ANN. § 10.1-603.15:2.B.1.a (2012).

[50] *See* VA. CODE ANN. § 62.1-44.19:20.B.1.a.

[51] VA. CODE ANN. § 10.1-603.15:2. B (2012).

[52] *See* VA. CODE ANN. § 10.1-603.15:2.B.1.b (2012).

[53] *See* VA. CODE ANN. § 10.1-603.15:2.A (2012) (directing Soil and Water Conservation Board to develop regulations); *see also* VA. CODE ANN. § 62.1-44.19:20.A (2012) (directing State Water Control Board to develop regulations).

[54] *See* VA. CODE ANN. § 10.1-603.15:2 (2012).

[55] *See* VA. CODE ANN. § 62.1-44.19:20.B.1 (2012).

ensure that the appropriate agency will have the ability to inspect and audit.[56] These regulations will also include procedures for bundling credits and authorize "reasonable" fees not to exceed $10,000 per application.[57]

To facilitate the development of a viable credit market, the regulations are directed to promote certainty for credit market participants to the extent possible.[58] DCR must establish and maintain a free, online Virginia Nutrient Credit Registry of all certified credits.[59] Credits that are certified and registered will be transferrable on terms agreed by the owner and the credit buyer.[60]

C. Trading for Successful Nutrient Reductions

The key metric for measuring the success of this program is the extent to which it may lead to measurable pollution reductions. Many observers have expressed reservations.[61] As one Bay expert noted, "[n]utrient credit trading should not be viewed as a water quality improvement program. That is, trading changes where the pollution reduction occurs but not the amount of reductions."[62] Others have been blunter about their concerns, with one describing Virginia's new trading law as "a giant 'For Sale' sign on the Chesapeake Bay" that sets the stage "to create a marketplace out of this sacred common resource, with the bay [*sic*] being sold off credit-by-credit."[63]

While caution – and even skepticism – may be warranted, the Virginia program includes many provisions that will enhance the likelihood of re-

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[56] See VA. CODE ANN. § 10.1-603.15:2.B.6 (2012) (regulations for Department of Conservation and Recreation); VA. CODE ANN. § 62.1-44.19:20.B.6 (2012) (regulations for Department of Environmental Quality).

[57] *See* VA. CODE ANN. § 10.1-603.15.2.B (2012).

[58] *See* VA. CODE ANN. § 10.1-603.15:2.A (2012).

[59] *See* VA. CODE ANN. § 10.1-603.15:2.C (2012).

[60] *Id.*

[61] *See, e.g.*, Wenonah Hauter, *Banking on the Bay*, HUFFINGTON POST, May 5, 2012, *available at* http://www.huffingtonpost.com/wenonah-hauter/banking-on-the-bay_b_1468753.html?view=print&comm_ref=false; *see also* Darryl Fears, *Bay Cleanup Plan Has Environmental Groups at Odds*, WASHINGTON POST, Apr. 29, 2012, *available at* http://www.washingtonpost.com/national/health-science/chesapeake-bay-cleanup-groups-are-at-odds/2012/04/29/glQAf3q5pT_print.html (noting concerns of some watershed groups that nutrient trading will allow more pollution to the Chesapeake Bay because lax farm regulations in Bay watershed states will impede the EPA's ability to discern whether farmers have met pollution reduction goals).

[62] Joseph H. Maroon, Emerging issues in Nutrient Credit Trading in the Chesapeake Bay Watershed (2011), available at archives.chesapeakebay.net/pubs/subcommittee/cac/NUTRIENT%20CREDIT%20TRADING%20WHITE%20PAPER%20Updated%20Final%20Version%209.2.pdf (also noting that steps, including required retirement of credits, could be incorporated into a trading program to enhance its nutrient reduction effects).

[63] Hauter, supra note 62; see also Fears, supra note 62.

sulting nutrient reductions. First, as proposed in the Phase I WIP and as urged by the Bay TMDL, the legislation expressly ties the trading program to the pollution-reduction commitments and associated metrics of the Phase I WIP. Appropriate credit generation "baselines" - that is, the level of nutrients flowing from an activity that must first be attained before the activity can generate certifiable credits - are to be based on the levels assigned in the Phase I WIP.[64] Baseline dates for all credit-generating practices must also be based on the Phase I WIP or other approved TMDL.[65] By linking baselines to the express assignments of the Phase I WIP, the General Assembly set a clear standard for the regulations to follow.

Second, the legislation authorizes credit use by regulated entities whose permits, compliance plans, and performance are subject to regulatory scrutiny.[66] The obligations of such entities to meet the practices and pollution reductions in their permits are enforceable against the permittee, in the event any credits purchased for compliance reasons fail.[67]

Third, the legislation requires the permanent retirement of 5% of credits in the Chesapeake Bay watershed reduction, to be taken at the time of certification, to offset growth in unregulated nutrient pollution loads.[68] This is a key strategy given the importance of unregulated pollution sources.

Fourth, the regulatory entities will have significant responsibilities for setting standards, providing technical oversight, auditing, and inspection for compliance.[69] The Soil and Water Conservation Board must establish requirements to "reasonably assure the generation of the credit depending on the nature of the credit-generating activity"[70] and, together with the State Water Control Board, is charged with requiring, for the matters under their respective jurisdictions, appropriate legal instruments to ensure perpetual

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[64] Baselines for agricultural practices are those activities "necessary to achieve a level of [nutrient] reduction assigned in the Virginia Phase I WIP or approved TMDLs," baselines for land use conversion must be based on the pre-conversion land use and the level of nutrient reductions assigned in the Phase I WIP or approved TMDLs applicable to that use, and baselines for existing development shall be set at a level necessary to achieve reductions assigned in the Phase I WIP, except for new and re-development activities, for which baselines will be established pursuant to the Commonwealth's regulations on post-construction nutrient loading requirements. *See* VA. CODE ANN. § 10.1-603.15:2.B.2 (2012)*; see also* VA. CODE ANN. § 62.1-44.19:20.B.2.a (2012) (baselines must be set "in accordance with any applicable provisions of the Virginia Chesapeake Bay TMDL Watershed Implementation Plan or approved TMDLs").

[65] *See* VA. CODE ANN. § 10.1-603.15.2.B.2.g (2012).

[66] *See* VA. CODE ANN. § 10.1-603.15.3.B (2012).

[67] *See* VA. CODE ANN. § 10.1-603.15.2.D (2012).

[68] *See* VA. CODE ANN. § 10.1-603.15:2.B.8 (2012).

[69] *See* VA. CODE ANN. §§ 10.1-603.15:2.B.6 (2012).

[70] *See* VA. CODE ANN. §§ 10.1-603.15.2.B.1, 4 (2012).

credits, maintenance requirements and financial guarantees, including insurance and, for localities and some other entities, tax rate authority. Such tools will go a long way to ensuring that regulators can compel compliance and that market participants will have confidence in their credit transactions.

Fifth, the program creates an enforcement framework for credit generators and buyers.[71] Credit-generating facilities that are out of compliance may be subject to enforcement actions, including possible suspension of the right to transfer credits.[72] Assessed penalties, of up to $10,000, will be credited to the Stormwater Management Fund.[73] Credit buyers will also be subject to enforcement under their Virginia Pollution Discharge Elimination System (VPDES) permits if they purchase and rely on nonperforming nutrient credits. Accordingly, buyers and sellers will both have incentives to ensure the nutrient trading transactions are compliant.

The program provides many opportunities for public scrutiny and involvement. The online nutrient credit registry will be available to the public,[74] and public notice will be required for proposed nutrient credit-generating projects,[75] as well as the compliance plans submitted by permittees in the MS4, CAFO, and industrial stormwater programs who use nutrient credits for compliance purposes.[76] These new opportunities add to existing means of public participation in connection with the operation and administration of VPDES permits.

Once incorporated into the regulatory schemes, these features will assist in ensuring that the trading program remains consistent with the assumptions of the Bay TMDL, the commitments of the Phase I WIP, and will help bring about measurable nutrient reductions.

Local Water Quality Issues

As shown, the legislation provides many tools to bring about nutrient reductions. Yet the legislation is not perfect, and success is far from ensured. One important outstanding issue is the extent to which operation of the expanded program could allow for the pollution of local streams.[77] To be sure,

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[71] *See* VA. CODE ANN. § 10.1-603.15.4 (2012); VA. CODE ANN. § 10.1-603.8:1.O (2012).
[72] *See* VA. CODE ANN. § 10.1-603.15:2.4 (2012).
[73] *See* VA. CODE ANN. § 10.1-603.15:4.B (2012).
[74] *See* VA. CODE ANN. § 10.1-603.15:2.C.4 (2012).
[75] *See* VA. CODE ANN. § 10.1-603.15:2.B.1.F (2012).
[76] *See* VA. CODE ANN. § 10.1-603.15:3.E (2012).
[77] Under the Clean Water Act, the use of nutrient trading in the Bay's nutrient-impaired water segments must result in progress toward attainment of water quality standards in the impaired segment; not result

the legislation makes clear that use of credits must not contravene local water quality limitations, and it leaves unimpaired the authority of the Soil and Water Conservation Board and the State Water Control Board to establish or enforce more stringent water quality-based effluent limitations in permits where necessary to protect local water quality.[78] The legislation does not specify, however, how local water quality will be protected, nor does it require nutrient credit purchasers to demonstrate that any contemplated trade will not harm local water quality.[79] That omission could lead to water quality problems for local waterways.

For example, under the new program, nutrient credits to offset new development must be purchased in the same or adjacent eight-digit HUC segment;[80] this is a felicitous limitation intended to ensure that one locality does not secure the nutrient benefits of a trade and another, only its detriments. However, if a locality determines that credits are not available in the location of the development project, the legislation would allow credits to be purchased anywhere in the tributary.[81] In such a case, a developer could offset the increased pollution arising from a project by using nutrient credits generated at a distant point in the tributary basin,[82] without demonstrating that local water quality will not be harmed. At least under the present framework, localities would have little recourse in such a situation.

CONCLUSION

As the foregoing shows, the General Assembly has crafted the framework for an expansive and innovative nutrient trading program that may assist in bringing about nutrient reductions to the Chesapeake Bay and its tributaries while allowing for flexible development. The extent to which the program will be successful in achieving those goals and avoiding risks to local waterways cannot be predicted with certainty, however; much will depend on the breadth and rigor of the regulations that will be developed to

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in exceedances of water quality standards in the purchaser's impaired segment; not increase delivery loads in downstream impaired segments; not violate water quality standards in any intermediate segments; and not violate local water quality standards. See Bay TMDL, supra note 5, at Appendix S-6.

[78] *See* VA. CODE ANN. § 10.1-603.15:3.F (2012).

[79] For an interesting example of a situation where such specific evidence was required, see Gov't Of The District of Columbia Mun. Separate Storm Sewer Sys., 10 E.A.D. 323, 326 (EAB 2002) (remanding D.C.'s MS4 permit for further analysis and additional record support of determination that specific BMPs prescribed in the permit will be adequate to ensure compliance with water quality standards).

[80] *See* VA. CODE ANN. § 10.1-603.8.1.F (2012).

[81] *Id.*

[82] *See* VA. CODE ANN. § 10.1-603.8:1.E (2012).

implement it and the actions of the regulatory bodies charged with enforcing it.